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 VAN, BRUNT, E. E. Arizona Public Service Co.  
 RECIPIENT NAME: RECIPIENT AFFILIATION:  
 TEDESCO, R. L. Assistant Director for Licensing

SUBJECT: Notifies that util. review of NUREG-0857, re historical seismicity in State of AZ complete. Approach used to define regional seismicity & develop seismic design criteria conservative. Item 2 of SER considered resolved.

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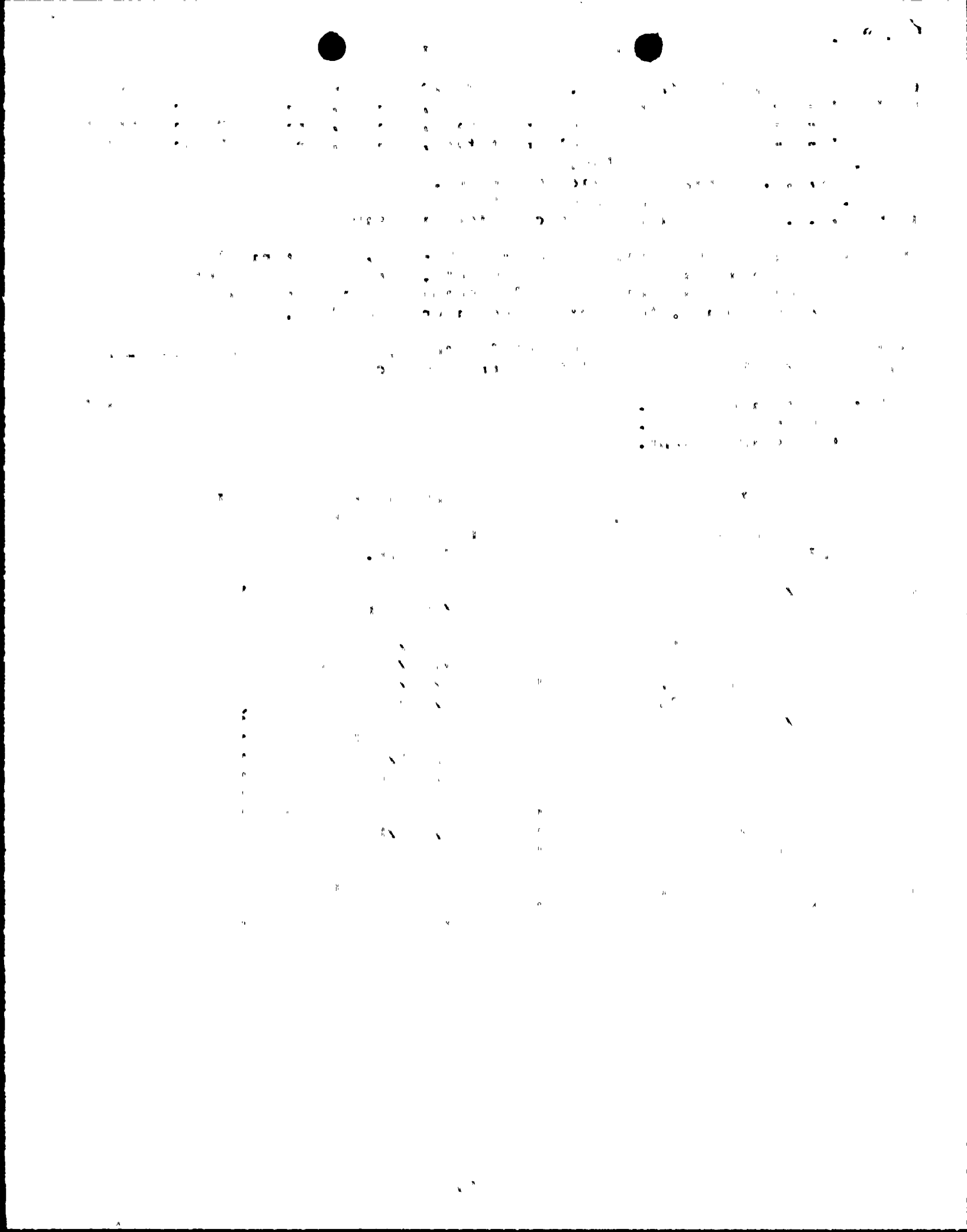
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ARIZONA



PUBLIC SERVICE COMPANY

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May 21, 1982  
ANPP-21024 -ACR/WFQ

Mr. R. L. Tedesco  
Assistant Director for Licensing  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station  
(PVNGS) Units 1, 2 and 3  
Docket Nos. STN-50-528/529/530  
File: 82-056-026; G.1.10

Reference: NUREG-0857, "Safety Evaluation Report" related to the  
operation of Palo Verde Nuclear Generating Station  
Units 1, 2 and 3, dated November, 1981

Dear Mr. Tedesco:

The referenced SER, Section 2.5.2.3 (Pg 2-24), stated APS' commitment to review the results of a study discussing historical seismicity in Arizona when the study is completed. This APS commitment resulted from NRC question 230.2 as stated in the PVNGS FSAR Appendix 2A (Question 2A.4-items 6)

The final study has been completed and is referenced as follows:

Dubois, 5; 1981, Historical Seismicity in Arizona Final Report;  
Arizona Bureau of Geology and Mineral Technology,  
845 N. Park Avenue, Tucson, Arizona 85719; 199 pp.  
Partially funded by USGS Contract No. 14-18-0001-  
18396 and NRC Contract No. 04-79-212.

Our evaluation of results of the study is provided as Attachment 1. In addition, the FSAR will be updated to incorporate this discussion in a future amendment.

We believe the information adequately resolves confirmatory Item 2 of the subject SER (Section 1.10 pg 1-9). If you have any further comments, please contact me as soon as possible.

Very truly yours,

E. E. Van Brunt, Jr.  
APS Vice President,  
Nuclear Projects  
ANPP Project Director

EEVBJr/WFQ

Attach. 1

cc: E. Licitra (w/a)  
R. L. Greenfield (w/a)

A. C. Gehr (4141) (w/a)  
L. Bernabei, Esq. (w/a)

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STATE OF ARIZONA     )  
                              ) ss.  
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President Nuclear Projects of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority so to do, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt, Jr.  
Edwin E. Van Brunt, Jr.

Sworn to before me this 21 day of May, 1982.

Robert R. Watts  
Notary Public

My Commission expires:

Oct 2, 1985



EVALUATION OF DUBOIS 1981 STUDY

This report represents a comprehensive assessment of historical seismicity in Arizona. A comparison of information in the Dubois (1981) report with the PVNGS PSAR indicates the latest work both confirms and refines the data presented in the FSAR relating to Arizona seismicity. The major items affected are as follows:

- o The 1887 Sonora Earthquake has been assigned a magnitude of 7.25 (moment magnitude) whereas a conservative estimate of magnitude 8 was assigned to the event in the FSAR.
- o The seismic zones shown on Dubois (1981), based solely on historical seismicity, are clearly less conservative with respect to SGE analysis than the Seismic Zonation model presented in the FSAR (Figure 2.5-25). Dubois (1981) shows separate zones of seismicity in the northwest and southeast corners of the state. The PSAR shows Zone C as continuous across the state from northwest to southeast, and the zone is therefore clearly more conservative for the risk evaluation. From a scientific viewpoint, a new analysis with the benefit of the upgraded data base might lead to a modification of the zone model presented in the FSAR. However, the FSAR results are conservative with respect to any proposed changes in the seismic zonation.
- o If the seismic zones depicted by Dubois (1981) were used to develop the SSE, the SSE (an earthquake similar to the 1887 Sonora Earthquake) would be located farther away from PVNGS than the 72 miles now used in the FSAR. Seismic analysis using a greater epicentral distance and a lesser magnitude of 7.25 (Dubois, 1981), would predict significantly less SSE ground motion than the 0.2g presently used for seismic design at PVNGS.
- o Earthquake epicenters have been redefined and many unverified events have been eliminated. Other seismologic data, such as isoseismal maps, have been added or updated as a result of the study by Dubois.

In summary, this recent assessment of historical seismicity in Arizona strongly suggests that the approach used to define the regional seismicity and to develop the seismic design criteria for PVNGS was in fact conservative.

